Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-11 (Canceled).

12. (Previously Presented) A method for providing bidirectional data transmission between at least two communication devices, the method comprising:

transmitting data on a single communication path in one communication direction via a change in a current flow;

transmitting data simultaneously on the single communication path in an opposite communication direction via a change in a voltage;

providing the single communication path by one of maintaining a separate power supply for each of the at least two communication devices and implementing a single power supply for both communication directions by providing a steady minimum level of at least one of the voltage and the current flow;

generating the data to be transmitted via a change in the current flow as data pulses with an inverted pulse half and a non-inverted pulse half; and

encoding the data pulses with a pulse-edge change between the pulse halves using Manchester coding.

13. (Previously Presented) The method of claim 12, further comprising:

setting a high voltage level, a low voltage level, and an intermediate voltage level, wherein data transmitted by the change in the voltage is represented by changing between the high voltage level and the intermediate voltage level.

14. (Previously Presented) The method of claim 13, wherein a minimum level corresponds to the intermediate voltage level.

15. (Previously Presented) The method of claim 12, further comprising:

setting a high voltage level and a low voltage level, wherein data transmitted by the change in the voltage is represented by changing between the high voltage level and the low voltage level.

16. (Previously Presented) The method of claim 12, further comprising:

generating the data to be transmitted via the change in the voltage as data pulses with an inverted pulse half and a non-inverted pulse half; and

encoding the data pulses with an edge change between the pulse halves using a cyclic code.

17. (Currently Amended) A ~~device~~ system for providing bidirectional data transmission between at least two communication devices, the ~~device~~ system comprising:

a first arrangement to transmit data on a single communication path in one communication direction via a change in a current flow;

a second arrangement to simultaneously transmit data on the single communication path in an opposite communication direction via a change in a voltage;

one of a separate power supply for each of the at least two communication devices and a single power supply for both communication directions, the single power supply being operable to provide a constant minimum level of at least one of the voltage and the current flow; and

a fourth arrangement to generate data pulses with an inverted pulse half and a non-inverted pulse half, and to code the data pulses with an edge change between the pulse halves using a Manchester coding, the data pulses implementing at least the data to be transmitted via the change in the current flow.

18. (Currently Amended) The ~~device~~ system of claim 17, further comprising:

a third arrangement to perform the change in the voltage, wherein a high voltage level and a low voltage level [[is]] are set, and the data is represented by changing between the high voltage level and the low voltage level;

wherein there is a separate power supply for each of the communication directions.

19. (Currently Amended) The ~~device~~ system of claim 17, further comprising:

a third arrangement to provide the change in the voltage, wherein a high voltage level, a low voltage level, and an intermediate voltage level [[is]] are set, and the data is represented by changing between the high voltage level and the intermediate voltage level.

20. (Currently Amended) The ~~device~~ system of claim 17, further comprising:

a fifth arrangement to generate data pulses with an inverted pulse half and a non-inverted pulse half, and to encode the data pulses with an edge change between the pulse halves using a cyclic code, the data pulses implementing at least the data to be transmitted via the change in voltage.

21. (Currently Amended) The ~~device~~ system of claim 20, wherein the cyclic code includes one of a Manchester code, a Hamming code, and an Abramson code.

22. (Previously Presented) The method of claim 16, wherein the cyclic code includes one of a Manchester code, a Hamming code, and an Abramson code.